AMENDMENTS TO THE CLAIMS

1. (Currently amended) A radiation source comprising:

a base;

a curved reflector extending along an axis and attached to the base;

at least two pins passing through the base, within the reflector, and along the axis of the reflector; and

a filament helically wound about the pins and having a high emissivity outwardly facing surface and opposing ends electrically connected to a respective one of the pins so that upon passage of electrical energy through the filament, the filament becomes electrically heated and emits infrared radiation, wherein the helically wound filament has a diameter that decreases along the axis and away from the base.

2. (Original) The radiation source of claim 1 wherein the reflector is parabolic.

3. (Original) The radiation source of claim 1 wherein the reflector is elliptical.

4. (Original) The radiation source of claim 1 wherein the reflector is covered with a window.

5. (Original) The radiation source of claim 4 wherein the window includes at least one of sapphire, calcium fluoride, zinc selenide, silicon or germanium.

6. (Original) The radiation source of claim 4 wherein the base, the reflector and the window form an enclosure for the helical filament which is hermetically sealed.

7. (Original) The radiation source of claim 6 wherein an inert gas is contained within the enclosure.

8. (Original) The radiation source of claim 1 wherein at least one of the ends of the helical filament is wrapped around one of the pins to provide a mechanism for strain relief.

9. (Original) The radiation source of claim 1 wherein the filament has a low emissivity inwardly facing surface.

10. (Canceled)

11. (Original) The radiation source of claim 1 wherein the helically wound filament has a diameter that monotonically decreases along the axis.

12. (Original) The radiation source of claim 1 wherein the reflector comprises a non ferrous metal.

13. (Original) The radiation source of claim 1 wherein the reflector is coated or plated with at least one of aluminum, gold and silver.

14. (Original) The radiation source of claim 1 wherein the outwardly facing surface of the filament is textured with features that are appoximately sized to a selected infrared wavelength spectrum.

15. (Original) The radiation source of claim 14 wherein the features are regularly distributed about the textured surface and extend outwardly from the surface.

16. (Original) The radiation source of claim 14, wherein the features are sized to between about two and ten microns.

17. (Original) The radiation source of claim 14, wherein the features are substantially uniform in size such that the emissions have a cut-off wavelength greater than the size of the features.

18. (Original) The radiation source of claim 17, wherein the cut-off wavelength is approximately 2π times the size of the features.

19. (Original) The radiation source of claim 14, wherein the features comprise peaks and valleys.

20. (Original) The radiation source of claim 14 wherein the features are randomly distributed about the textured surface and extend outwardly from the surface.

21. (Original) The radiation source of claim 14, wherein the features are formed by ion beam bombardment.

22. (Original) The radiation source according to claim 1, wherein the filament has a thickness of approximately five microns.

23. (Original) The radiation source of claim 1 wherein the wavelength spectrum of the filament is tuned to an infared radiation range.

24. (Original) The radiation source of claim 1 wherein the filament comprises nickel-chromium foil.

25. (Original) The radiation source of claim 1 wherein a width of the filament is greater than a space between adjacent coils of the helically wound filament.

26. (Original) The radiation source of claim 1 wherein the helically wound filament extends through an inlet of the curved reflector.

27. (Original) The radiation source of claim 1 wherein the pins include a first pin and a second pin, and the pins each include a portion extending at an angle with respect to the axis of the reflector.

28. (Original) The radiation source of claim 27 wherein:

the first pin includes a first portion extending at an angle with respect to the axis towards the second pin and a second portion extending from the first portion parallel with the axis; and

the second pin includes a first portion extending at an angle with respect to the axis towards the first pin and a second portion extending from the first portion of the second pin parallel with the axis.

29. (Original) The radiation source of claim 28 wherein the second pin further includes a third portion extending from the second portion of the second pin at an angle with respect to the axis and away from the first pin, and a fourth portion extending from the third portion of the second pin parallel with the axis, and wherein the a first end of the helically wound filament is attached to the second portion of the first pin and a second end of the helically wound filament is attached to the fourth portion of the second pin.

30. (Original) The radiation source of claim 1 wherein the pins are made of nickel-plated kovar.